

ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

Title of Invention	CARDIAC IMAGING SYSTEM AND METHOD FOR QUANTIFICATION OF DESYNCHRONY OF VENTRICLES FOR BIVENTRICULAR PACING
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Application Number :

Confirmation Number:

First Named Applicant: Shankara Reddy

Attorney Docket Number: 138162

Art Unit:

Examiner:

Search string: (3954098 or 5245287 or 5823958 or 6235038 or 6314310 or 6266553 or 6081577 or 6556695 or 6490475 or 6549606 or 6456867 or 6235083 or 6154516 or 6233304 or 6249693 or 6252924 or 6256368 or 6325797 or 6348793 or 6353445 or 6381485 or 6411848 or 6421412 or 20020010392 or 20020046756 or 20020138105 or 20030023266 or 20030028182).pn

US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
P8	1	3954098	1976-05-04	Dick et al.		600	440
	2	5245287	1993-09-14	Nowak et al.		324	322
	3	5823958	1998-10-20	Truppe		600	426
	4	6235038	2001-05-22	Hunter et al.	B1	606	130
	5	6314310	2001-11-06	Ben-Haim et al.		600	424
	6	6266553	2001-07-24	Fluhrer et al.		600	428
	7	6081577	2000-06-27	Webber		378	23
	8	6556695	2003-04-29	Packer et al.		382	128
	9	6490475	2002-12-02	Seeley et al.		600	426
	10	6549606	2003-04-15	Vaillant et al.		378	4
	11	6456867	2002-09-24	Reisfeld		600	407
	12	6235083	2001-05-22	Hunter et al.	B1	606	130
	13	6154516	2000-11-28	Heuscher et al.		378	15
	14	6233304	2001-05-15	Hu et al.	B1	378	8
	15	6249693	2001-06-19	Cline et al.	B1	600	410
	16	6252924	2001-06-26	Davantes et al.	B1	378	8
	17	6256368	2001-07-03	Hsieh et al.	B1	378	8
	18	6325797	2001-12-04	Stewart et al.	B1	606	41
P8	19	6348793	2002-02-19	Balloni et al.	B1	324	309

PS	20	6353445	2002-03-05	Babula et al.	B1	345	733
	21	6381485	2002-04-30	Hunter et al.	B1	600	407
	22	6411848	2002-06-25	Kramer et al.	B2	607	9
PS	23	6421412	2002-07-16	Hsieh et al.	B1	378	9

US Published Applications

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init	Cite.No.	Pub. No.	Date	Applicant	Kind	Class	Subclass
PS	1	20020010392	2002-01-24	Desai	A1	600	374
	2	20020046756	2002-04-25	Laizzo et al.	A1	128	899
	3	20020138105	2002-09-26	Kralik	A1	607	9
✓	4	20030023266	2003-01-30	Borillo et al.	A1	606	200
PS	5	20030028182	2003-02-06	Sanchez et al.	A1	606	34

Signature

Examiner Name	Date
David S. ...	3 NOV 2006

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	10605903
Filing Date	2003-11-05
First Named Inventor	Shankara Bonthu Reddy
Art Unit	2882
Examiner Name	NYA
Attorney Docket Number	138162 (GEM-0079)

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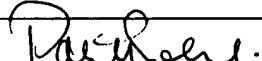
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	1	Toshiko Nakai, Michael D. Lesh, Edward P. Gerstenfeld, Renu Virmani, Russell Jones and Randall J. Lee; "Percutaneous Left Atrial Appendage Occlusion (PLAATO) for Preventing Cardioembolism: First Experience in Canine Model", Circulation 2002; 105;2217-2222; originally published online April 15, 2002; American Heart Association; http://circ.ahajournals.org/cgi/content/full/105/18/2217	<input type="checkbox"/>
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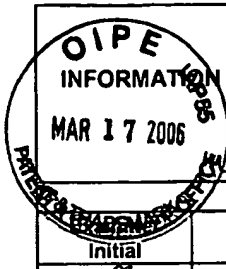
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PTO-1449		Attorney's Docket Number 138162/GEM-0079	Serial Number 10/605,903
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <u>LIST OF ITEMS</u> (Use several sheets if necessary)		Name of Applicant Reddy et al.	
		Filing Date 11/5/2003	Group Art Unit 2882

U.S. PATENT DOCUMENTS						
Initial	Document Number	Date	NAME	Class	Subclass	Filing Date If Appropriate
PS	6208347	3/2001	Migdal	345	419	
	6246898	6/2001	Vesely	600	424	
PS	6504894	1/2003	Pan	378	8	

U.S. PATENT APPLICATION PUBLICATIONS						
Examiner Initial	Document Number	Date	NAME	Class	Subclass	Filing Date If Appropriate
PS	2003/0018251	1/2003	Solomon	600	427	
PS	2004/0027347	2/2004	Farsaie	345	419	

FOREIGN PATENT DOCUMENTS						
Examiner Initial	Document Number	Date	COUNTRY	Class	Subclass	TRANSLATION YES NO

OTHER INFORMATION (including author, title, date, pertinent)	
	Sra et al., "Registration of Three-Dimensional Left Atrial Computed Tomographic Images With Projection Images Obtained Using Fluoroscopy", Circulation 2005; 112: 3763-3768.

EXAMINER <i>Paul Sorel</i>	DATE CONSIDERED 3 NOV 2006
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PK	1	20020042570	A1	2002-04-11	Schaldach et al.	

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PS	1	6246898		2001-06-12	Vesely, et al,	
	2	7047060		2006-05-16	Wu	
	3	4364397		1982-12-21	Citron, et al.	
	4	5765561		1998-06-16	Chen, et al.	
PS	5	6950689		2005-09-27	Willis, et al.	

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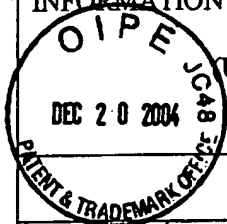
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FORM PTO 1449 (REV 2-32)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	File No. 138162	Serial No. 10/605,903
		Applicant(s): Shankara et al.	
		Filing Date: 11/05/2003	Group: 2882

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
PS	1	5,391,199	02/21/1995	Ben-Haim	607	122	07/20/1993
	2	5,738,093	*4/14/1998	Ben-Haim	128	653.1	02/01/1996
	3	6,289,115 B1	09/11/2001	Takeo	382	130	02/12/1999
	4	6,289,239 B1	09/11/2001	Panescu et al.	600	523	03/29/2000
	5	6,389,104 B1	05/14/2002	Bani-Hashemi et al.	378	98.12	06/30/2000
	6	6,468,265 B1	10/22/2002	Evans et al.	606	1	11/09/1999
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PS	8	2003/0097219 A1	05/22/2003	O'Donnell et al.	702	19	10/12/2001
	9	2003/0187358 A1	10/02/2003	Okerlund et al.	600	443	03/15/2002
	10	2003/0220557 A1	11/27/2003	Cleary et al.	600	409	02/28/2003
	11	2004/0087850 A1	05/06/2004	Okerlund et al.	600	407	11/01/2002
	12	2004/0225328 A1	11/11/2004	Okerlund et al.	607	9	05/09/2003
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION Y / N
PS	15	EP 1182619 A2	27.02.2002	European Union			Y
	16	EP 1321101 A2	18.12.2002	European Union			Y
	17	WO 91/07726	30.05.1991	WO			Y
PS	18	WO 96/10949	18.04.1996	WO			Y

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Patents, etc.)

	PS	19	PCT Search Report for PCT/US2004/020909
	PS	20	F. H.M. Wittkamp et al.; "Loca Lisa - New Technique for Real-Time 3-Dimensional Localization of Regular Intracardiac Electrodes;" <i>Circulation</i> ; 1999; 99: 1312-1317.
		21	"Advanced Vessel Analysis" product description, [online] http://www.gehealthcare.com/us/en/ct/clin_app/products/aswessel.html [retrieved 12/01/2004]
	PS	22	"CardilQ" product description, [online], http://egems.gehealthcare.com/geCommunity/Europe/flex_trial/awFlexTrial/aw3_1/eflextrial [retrieved 12/01/2004]

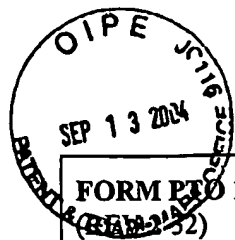
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Paul Sorel

Date considered

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PATENT AND TRADEMARK OFFICEFile No.
138162 / GEM-0079Serial No.
10/605,903

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Applicant(s):
Reddy et al.Filing Date:
11/05/2003Group:
2882

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
PS	1	4,574,807	03/11/1986	Hewson et al.	128	419 PG	03/02/1984
	2	5,274,551	12/28/1993	Corby, Jr.	364	413.13	11/29/1991
	3	5,304,212	04/16/1994	Czeisler et al.	607	88	01/10/1992
	4	5,348,020	09/20/1994	Huston	128	696	12/15/1992
	5	5,353,795	10/11/1994	Souza et al.	128	653.2	12/10/1992
	6	5,431,688	07/11/1995	Freeman	607	10	07/19/1993
	7	5,568,384	10/22/1996	Robb et al.	364	419.13	10/13/1992
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FOREIGN PATENT DOCUMENTS

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Patents, etc.)

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	2	L. Gepstein et al., "A Novel Method for Nonfluoroscopic Catheter-Based Electroanatomical Mapping of the Heart: In Vitro and In Vivo Accuracy Results;" <i>Circulation</i> 1997; 95:1611-22.
	3	S. Shpun et al., "Guidance of Radiofrequency Endocardial Ablation with Real-time Three-dimensional Magnetic Navigation System;" <i>Circulation</i> 1997; 96:2016-21.
PS	4	J. Sra et al., "Electroanatomic Mapping to Identify Breakthrough Sites in Recurrent Typical Human Flutter;" <i>Pacing Clin. Electrophysiol</i> 2000; 23:1479-92.

Examiner

Paul Sere

Date considered

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Reddy et al.

Filing Date:
11/05/2003

Group:
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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
PS	9	5,951,475	09/14/1999	Gueziec et al.	600	425	09/25/1997
	10	6,490,479 B2	12/03/2002	Bock	600	518	12/28/2000
PS	11	6,584,343 B1	06/24/2003	Ransbury et al.	600	509	07/06/2000

U.S. PATENT APPLICATION PUBLICATIONS

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

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PS		5	R.J. Schilling et al.; "Simultaneous Endocardial Mapping in the Human Left Ventricle Using a Noncontact Catheter: Comparison of Contact and Reconstructed Electrograms During Sinus Rhythm;" <i>Circulation</i> 1998; 98:997-98.				
		6	C. C. Gornick et al., "Validation of a New Noncontact Catheter System for Electroanatomic Mapping of Left Ventricular Endocardium;" <i>Circulation</i> 1999; 99:829-835				
		7	J. Sra et al., "Noncontact Mapping for Radiofrequency Ablation of Complex Cardiac Arrhythmias;" <i>J. Interv. Cardiac Electrophysiol</i> 2001; 5:323-331.				
PS		8	N. M.S. de Groot et al., "Three-Dimensional Catheter Positioning During Radiofrequency Ablation in Patients: First Application of a Real-Time Position Management System;" <i>J. Interv. Cardiac Electrophysiol</i> 2001; Nov. 11(11):1183-92				

Examiner

Pauli Sorel

Date considered

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ps	9	J. Schreieck et al., "Radiofrequency Ablation of Cardiac Arrhythmias Using a Three-Dimensional Real-Time Position Management and Mapping System;" <i>Pacing Clin. Electrophysiol</i> , 2002 Dec., 25(12):1699-707.
↓	10	F. Wittkamp et al., "Real-Time, Three-Dimensional, Nonfluoroscopic Localization of the Lasso Catheter;" <i>J. Interv. Cardiac Electrophysiol</i> 2002, 13:630
↓	11	J. Sra et al., "Cardiac Chamber Geometry Construction, Catheter Navigation and Ablation Using Cutaneous Patches;" <i>Supplement to Circulation</i> 2003 Oct., 108 (17): IV-585, Abstract 2667.
ps	12	J. Sra et al., "Three-Dimensional Right Atrial Geometry Construction and Catheter Tracking Using Cutaneous Patches;" <i>J. Interv. Cardiac Electrophysiol</i> , 2003 14:897.

Examiner *Patricia Serr.*

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Patents, etc.)

PS	13	Z. Zhang; " Iterative Point Matching for Registration of Free-Form Curves;" <i>Inria</i> 1992, pages 1 - 40.				
	14	C.L. Grines et al.; "Functional Abnormalities in Isolated Left Bundle Branch Block: The Effect of Interventricular Asynchrony;" <i>Circulation</i> ; 1989; 79:845-53.				
↓	15	H. B. Xia et al., "Differing effects of right ventricular pacing and left bundle branch block on left ventricular function;" <i>Br. Heart J.</i> , 1993; 69:166-173.				
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Patil S. S.

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Ps	17	M. V. Pitzalis et al., "Cardiac Resynchronization Therapy Tailored by Echocardiographic Evaluation of Ventricular Achnrony;" <i>J. Am. Coll. Cardiol.</i> 2002; 40:1615-22.
	18	W. T. Abraham et al., "Cardiac Resynchronization in Chronic Heart Failure;" <i>N. Engl. J. Med.</i> 2002; 346:1845-1853
↓	19	C. A. Pelizzari et al., "Accurate Three-Dimensional Registration of CT, PET, and/or MR Images of the Brain;" <i>J. Comput. Assist. Tomogr.</i> 1989; 13:20-26
	20	A.C. Evans et al., "MRI-PET Correlation in Three Dimensions Using a Volume-of-Interest (VOI) Atlas;" <i>J. Cereb Flow Metab.</i> 1991; 11:A69-A78.
Ps	21	R.P. Woods et al., "Rapid Automated Algorithm for Aligning and Reslicing PET Images;" <i>Journal of Computer Assisted Tomography</i> , 1992; 16:620-633

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Patricia Sere.

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	23	L. Thurfell et al.; "Registration of Neuroimaging Data: Implementation and Clinical Applications;" <i>American Society of Neuroimaging</i> ; 2000; 10:39-46
	24	S. A. Ben-Haim et al.; "Nonfluoroscopic, in vivo navigation and mapping technology;" <i>Nature Medicine</i> ; 1996, 2:1393-5.
	25	B. Taccardi et al.; "A new intracavitary probe for detecting the site of origin of ectopic ventricular beats during one cardiac cycle;" <i>Circulation</i> ; 1987; 75:272-81
	26	F. H.M. Wittkamp et al.; "New Technique for Real-Time 3-Dimensional Localization of Regular Intracardiac Electrodes;" <i>Circulation</i> ; 1999; 99:1312-17.
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David Schell

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↓	30	P. A. van den Elsen et al., "Medical Image Matching - A Review with Classification," <i>IEEE Engineering in Medicine and Biology</i> , 1993; 26 - 38.
↓	31	G. T. Barnes et al., "Conventional and Spiral Computed Tomography: Physical Principles and Image Quality Considerations," <i>Computed Body Tomography</i> , 1998, Lippincot-Raven, Philadelphia, PA pp 1 - 20.
↓	32	Milan Sonka and J. Michael Fitzpatrick (eds); <i>Handbook of Medical Imaging Vol. 2. Medical Image Processing and Analysis</i> ; pp 129-174 & 447-506
PS	33	W. M. Feinberg et al., "Prevalence, Age Distribution, and Gender of Patients with Atrial Fibrillation," <i>Arch. Intern. Med.</i> Vol. 155; March 1995; pages 469-473
PS	34	*J. I. Cox, J. P. Boineau, R. B. Schuessler, T. B. Ferguson, Jr., M. E. Cain, B. D. Lindsay, P. B. Conn, K. M. Kater, D. G. Lappas; "Operations for Atrial Fibrillation;" <i>Electrophysiology, Pacing and Arrhythmia, Clin. Cardiol.</i> 14, 1991; pages 827-834

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David Sore

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<i>PS</i>	35	*M. Haissaguerre, P. Jaïs, S. C. Shah, A. Takahashi, M. Hocini, G. Quiniou, S. Garrigue, A. Le Mouroux, P. Le Metayer, and J. Clementy; "Spontaneous Initiation of Atrial Fibrillation by Ectopic Beats Originating in the Pulmonary Veins;" The New England Journal of Medicine, Vol 339, No. 10, September 3, 1998; pp 659-668. <i>considered</i>				
<i>PS</i>	36	*C. Pappone, S. Rosanio, G. Augello, G. Gallus, G. Vicedomini, P. Mazzone, S. Gulletta, F. Gugliotta, A. Pappone, V. Santinelli, V. Tortoriello, S. Sala, A. Zangrillo, G. Crescenzi, S. Benussi, and O. Alfieri; "Mortality, Morbidity, and Quality of Life After Circumferential Pulmonary Vein Ablation for Atrial Fibrillation;" Journal of the American College of Cardiology, Vol. 42, No. 2; 2003; 185 - 197.				
<i>PS</i>	37	*J. Sra et al., "Current Problems in Cardiology- Atrial Fibrillation: Epidemiology, Mechanisms, and Management;" Current Problems in Cardiology, July 2000; pages 406 - 524 <i>considered</i>				

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Pauli Sore

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PS	38	*ACC/AHA/ESC Practise Guidelines; Eur. Heart J., Vol. 22, issue 20, October 2001; pages 1854 - 1923				
PS	39	*M. D. Leash, T. Trepelso, H. Omran, A. Bartorelli, P. Della Bella, T. Nakai, M. Reisman, D. fleschenberb, U. Krumdorf, and D. Scherer; "Tiny Device Blocks 'Usless' Part of Heart, prevents blood clots;" Journal Report; American Heart Association; April 9, 2002				
PS	40	*Ellen Barlow, "Operating in 3-D" found at www.med.harvard.edu/publications/41MAB/1966o3d.html				

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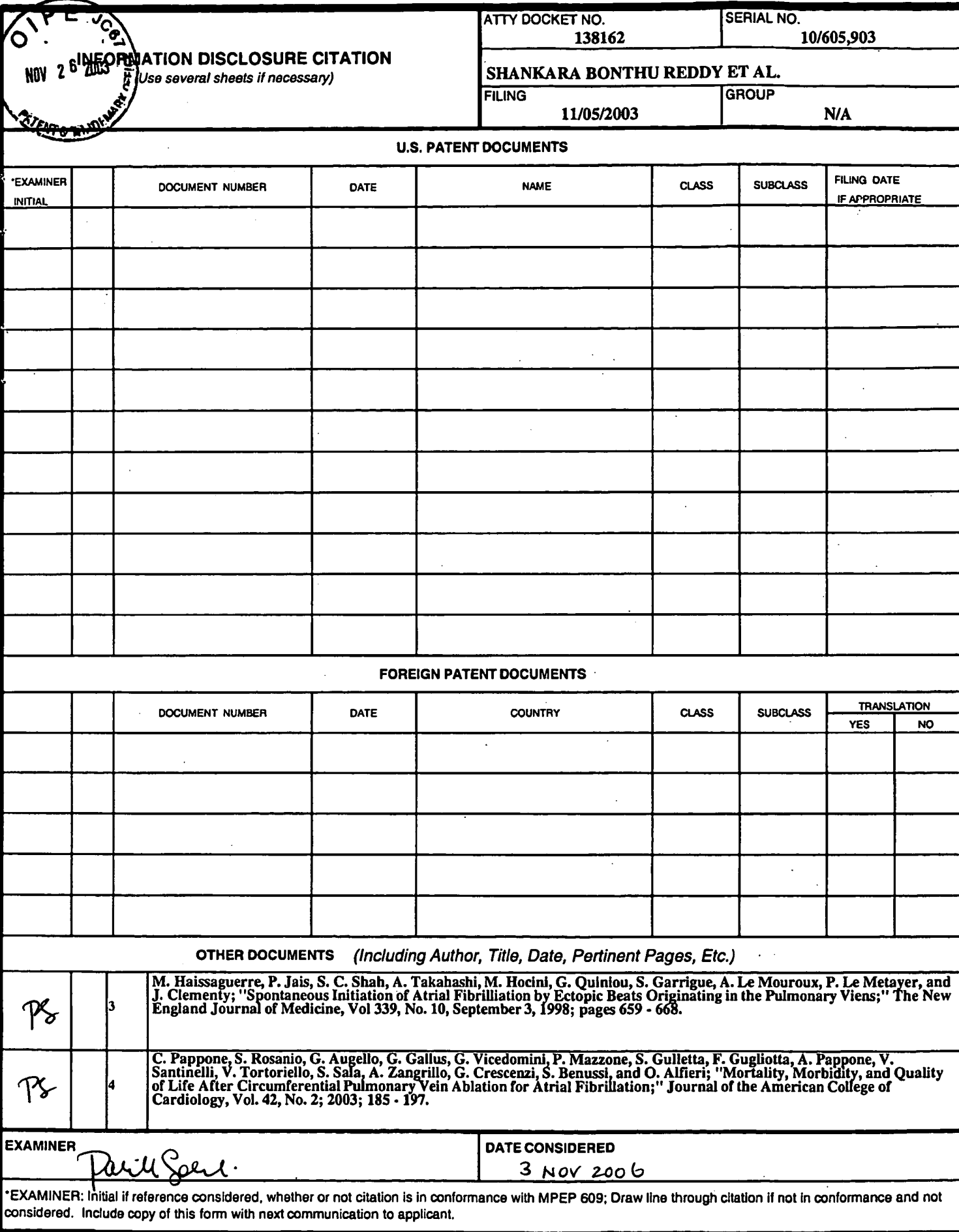
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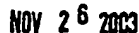
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ACC/AHA/ESC Practise Guidelines; Eur. Heart J., Vol. 22, issue 20, October 2001; pages 1854 - 1923

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PS	7	M. D. Leash, T. Trepelse, H. Omran, A. Bartorelli, P. Della Bella, T. Nakai, M. Reisman, D. fleschenberb, U. Krumdsdorf, and D. Scherer; "Tiny Device Blocks 'Usless' Part of Heart, prevents blood clots;" Journal Report; American Heart Association; April 9, 2002
PS	8	Ellen Barlow; "Operating in 3-D" found at www.med.harvard.edu/publications/HMAB/196fo3d.html

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